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NEWS 3 Jan 29 FSTA has been reloaded and moves to weekly updates
NEWS 4 Feb 01 DKILIT now produced by FIZ Karlsruhe and has a new update frequency
NEWS 5 Feb 19 Access via Tymnet and SprintNet Eliminated Effective 3/31/02
NEWS 6 Mar 08 Gene Names now available in BIOSIS
NEWS 7 Mar 22 TOXLIT no longer available
NEWS 8 Mar 22 TRCTHERMO no longer available
NEWS 9 Mar 28 US Provisional Priorities searched with P in CA/CAplus and USPATFULL
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NEWS 13 Apr 09 BEILSTEIN: Reload and Implementation of a New Subject Area
NEWS 14 Apr 09 ZDB will be removed from STN
NEWS 15 Apr 19 US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
NEWS 16 Apr 22 Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
NEWS 17 Apr 22 BIOSIS Gene Names now available in TOXCENTER
NEWS 18 Apr 22 Federal Research in Progress (FEDRIP) now available
NEWS 19 Jun 03 New e-mail delivery for search results now available
NEWS 20 Jun 10 MEDLINE Reload
NEWS 21 Jun 10 PCTFULL has been reloaded

NEWS EXPRESS February 1 CURRENT WINDOWS VERSION IS V6.0d,
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AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
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| FULL ESTIMATED COST | | 0.21 | 0.21 |

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FILE COVERS 1907 - 28 Jun 2002 VOL 136 ISS 26
 FILE LAST UPDATED: 26 Jun 2002 (20020626/ED)

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=> s anti-freeze protein
 L1 11 ANTI-FREEZE PROTEIN

=> s lichen
 L2 5350 LICHEN

=> s glycosylation
 L3 24874 GLYCOSYLATION

=> s 11 and 12 and 13
 L4 1 L1 AND L2 AND L3

=> d 14

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
 AN 2001:816714 CAPLUS
 DN 135:357072
 TI Anti-freeze proteins, their production and use
 IN Berry, Mark John; Doucet, Charlotte Juliette; Lundheim, Rolv Sigmund;
 Sevilla, Marie-Pierre; Whiteman, Sally-anne
 PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Limited
 SO PCT Int. Appl., 42 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|-------|----------|-----------------|----------|
| ----- | ----- | ----- | ----- | ----- |
| PI WO 2001083534 | A1 | 20011108 | WO 2001-EP3927 | 20010406 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, | | | | |

HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 PRAI GB 2000-10314 A 20000427
 RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
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FILE 'STNGUIDE' ENTERED AT 06:49:05 ON 28 JUN 2002
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FILE CONTAINS CURRENT INFORMATION.
 LAST RELOADED: Jun 21, 2002 (20020621/UP).

=> d 11 1-11
 YOU HAVE REQUESTED DATA FROM FILE 'CAPLUS' - CONTINUE? (Y)/N:y

L1 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2002 ACS
 AN 2002:453321 CAPLUS
 TI How can polar fishes survive underneath the sea ice? Effect of
anti-freeze protein
 AU Furukawa, Yoshinori; Nishimura, Yoshihiro; Yokoyama, Etsuro
 CS Inst. Low Temp. Sci., Hokkaido Univ., Japan
 SO Kotai Butsuri (2002), 37(6), 396-402
 CODEN: KOTBA2; ISSN: 0454-4544
 PB Agune Gijutsu Senta
 DT Journal
 LA Japanese

L1 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2002 ACS
 AN 2001:920685 CAPLUS
 DN 136:148040
 TI Guidelines for research and utilization of genetically modified fish
 AU Pandian, T. J.
 CS School of Biological Sciences, Madurai Kamaraj University, Madurai, 625
 021, India
 SO Current Science (2001), 81(9), 1172-1178
 CODEN: CUSCAM; ISSN: 0011-3891
 PB Current Science Association
 DT Journal; General Review
 LA English

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2002 ACS
 AN 2001:816714 CAPLUS
 DN 135:357072
 TI **Anti-freeze proteins**, their production and
 use
 IN Berry, Mark John; Doucet, Charlotte Juliette; Lundheim, Rolv Sigmund;
 Sevilla, Marie-Pierre; Whiteman, Sally-anne

PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Limited
SO PCT Int. Appl., 42 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|--|----------|-----------------|----------|
| PI | WO 2001083534 | A1 | 20011108 | WO 2001-EP3927 | 20010406 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| | RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |

PRAI GB 2000-10314 A 20000427

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 2001:453093 CAPLUS

DN 135:75838

TI Processes and organisms for the production of **anti-freeze proteins**

IN Berry, Mark John; Griffiths, Allen; Hill, Philip John; Laybourne-Parry, Johanna; Mills, Sarah Victoria

PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited

SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|--|----------|-----------------|----------|
| PI | WO 2001044275 | A2 | 20010621 | WO 2000-EP12396 | 20001205 |
| | WO 2001044275 | A3 | 20020321 | | |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| | RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | |
| | US 2002072108 | A1 | 20020613 | US 2000-737297 | 20001215 |
| PRAI | GB 1999-29696 | A | 19991215 | | |

L1 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1999:422307 CAPLUS

DN 131:225026

TI Studies of a putative ice-binding motif in winter flounder skin-type anti-freeze polypeptide

AU Lin, Qingsong; Ewart, K. Vanya; Yang, Daniel S. C.; Hew, Choy L.

CS Hospital for Sick Children, Departments of Laboratory Medicine, Pathobiology and Biochemistry, Division of Structural Biology and Biochemistry, University of Toronto, Toronto, ON, Can.

SO FEBS Letters (1999), 453(3), 331-334

CODEN: FEBBLAL; ISSN: 0014-5793

PB Elsevier Science B.V.

DT Journal

LA English

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1998:635626 CAPLUS

DN 129:244396

TI Frozen food product

IN Smallwood, Keith

PA Unilever N.V., Neth.; Unilever PLC

SO PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 5

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 9841107 | A1 | 19980924 | WO 1998-EP1576 | 19980312 |
| | W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI,
FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM,
GA, GN, ML, MR, NE, SN, TD, TG | | | | |
| | ZA 9706472 | A | 19990122 | ZA 1997-6472 | 19970722 |
| | AU 9872079 | A1 | 19981012 | AU 1998-72079 | 19980312 |
| | ZA 9802151 | A | 19990913 | ZA 1998-2151 | 19980313 |
| PRAI | EP 1996-305499 | A | 19960726 | | |
| | EP 1997-301719 | A | 19970314 | | |
| | WO 1998-EP1576 | W | 19980312 | | |

L1 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1997:119158 CAPLUS

DN 126:130754

TI Method of making frozen compositions •

IN Clemmings, John F.; Zoerb, Hans F.; Rosenwald, Diane R.; Huang, Victor T.

PA Pillsbury Co., USA

SO PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 9639878 | A1 | 19961219 | WO 1996-US6519 | 19960520 |
| | W: AU, BR, CA, CN, JP, MX
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| | CA 2195950 | AA | 19961219 | CA 1996-2195950 | 19960520 |
| | AU 9657904 | A1 | 19961230 | AU 1996-57904 | 19960520 |
| | AU 704570 | B2 | 19990429 | | |
| | EP 783254 | A1 | 19970716 | EP 1996-914594 | 19960520 |
| | EP 783254 | B1 | 20010829 | | |
| | R: DE, ES, FR, GB, IT | | | | |
| | CN 1155831 | A | 19970730 | CN 1996-190624 | 19960520 |
| | CN 1078454 | B | 20020130 | | |
| | JP 10508759 | T2 | 19980902 | JP 1996-500532 | 19960520 |
| | ES 2163627 | T3 | 20020201 | ES 1996-914594 | 19960520 |
| PRAI | US 1995-472500 | A | 19950607 | | |
| | WO 1996-US6519 | W | 19960520 | | |

L1 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1996:639361 CAPLUS

DN 125:329457
TI Synthesis of an **anti-freeze protein** type III
by fragment condensation
AU Brandtner, S.; Schleucher, J.; Lichte, E.; Stirnal, E.; Groeschke, P.;
Griesinger, C.
CS Institut fur Organische Chemie, Universitat Frankfurt, Frankfurt/Main,
D-60439, Germany
SO Pept. 1994, Proc. Eur. Pept. Symp., 23rd (1995), Meeting Date 1994,
222-223. Editor(s): Maia, Hernani L. S. Publisher: ESCOM, Leiden, Neth.
CODEN: 63MBAO
DT Conference
LA English

L1 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2002 ACS
AN 1995:69204 CAPLUS
DN 122:82065
TI Synthesis of an **anti-freeze protein**
AU Brandtner, S.; Schluemer, J.; Griesinger, C.
CS Inst. Org. Chem., Univ. Frankfurt, Frankfurt, D-60439, Germany
SO Pept.: Chem., Struct. Biol., Proc. Am. Pept. Symp., 13th (1994), Meeting
Date 1993, 49-50. Editor(s): Hodges, Robert S.; Smith, John A. Publisher:
ESCOM, Leiden, Neth.
CODEN: 60LXAW
DT Conference
LA English

L1 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2002 ACS
AN 1994:266141 CAPLUS
DN 120:266141
TI Extraction and isolation of antifreeze proteins from winter rye (*Secale cereale* L.) leaves
AU Hon, Wai-Ching; Griffith, Marilyn; Chong, Pele; Yang, Daniel S. C.
CS Dep. Biochem., McMaster Univ., Hamilton, ON, L8N 3Z5, Can.
SO Plant Physiol. (1994), 104(3), 971-80
CODEN: PLPHAY; ISSN: 0032-0889
DT Journal
LA English

L1 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2002 ACS
AN 1994:212024 CAPLUS
DN 120:212024
TI Protein purification from a complex solution with silica gel as sorbent
IN Lusk, Lance T.; Goldstein, Henry
PA Miller Brewing Co., USA
SO U.S., 7 pp.
CODEN: USXXAM
DT Patent
LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | US 5278284 | A | 19940111 | US 1992-882793 | 19920514 |
| | EP 646594 | A1 | 19950405 | EP 1993-115953 | 19931002 |
| | EP 646594 | B1 | 19970604 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE | | | | |
| | AT 154033 | E | 19970615 | AT 1993-115953 | 19931002 |
| | ES 2105033 | T3 | 19971016 | ES 1993-115953 | 19931002 |
| | JP 07145192 | A2 | 19950606 | JP 1993-251960 | 19931007 |
| PRAI | US 1992-882793 | | 19920514 | | |
| | EP 1993-115953 | | 19931002 | | |

WEST Search History

DATE: Friday, June 28, 2002

| <u>Set Name</u> | <u>Query</u> | <u>Hit Count</u> | <u>Set Name</u> |
|---------------------------------------|---|------------------|-----------------|
| side by side | | | result set |
| <i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i> | | | |
| L14 | L13 and l12 and l11 and l10 and l9 and l8 | 1 | L14 |
| L13 | 426/565 | 818 | L13 |
| L12 | 426/139 | 347 | L12 |
| L11 | 426/104 | 1965 | L11 |
| L10 | 426/101 | 439 | L10 |
| L9 | 426/100 | 316 | L9 |
| L8 | L7 and l6 and l5 and l4 and l3 | 96 | L8 |
| L7 | 530/328 | 2144 | L7 |
| L6 | 530/327 | 1727 | L6 |
| L5 | 530/326 | 2263 | L5 |
| L4 | 530/300 | 3094 | L4 |
| L3 | 530/350 | 9761 | L3 |
| L2 | 6096867 | 2 | L2 |
| L1 | 6090917 | 4 | L1 |

END OF SEARCH HISTORY

WEST Search History

DATE: Thursday, July 11, 2002

| <u>Set Name</u>
side by side | <u>Query</u> | <u>Hit Count</u> | <u>Set Name</u>
result set |
|---------------------------------------|--------------------------------|------------------|-------------------------------|
| <i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i> | | | |
| L9 | L8 and l7 and l6 and l4 and l3 | 0 | L9 |
| L8 | 530/328 | 2153 | L8 |
| L7 | 530/327 | 1736 | L7 |
| L6 | 530/326 | 2272 | L6 |
| L5 | 530/300 | 3131 | L5 |
| L4 | 530/350 | 9880 | L4 |
| L3 | l1 and l2 | 71 | L3 |
| L2 | 514/2 | 7246 | L2 |
| L1 | 514/1 | 378 | L1 |

END OF SEARCH HISTORY

| | Type | L # | Hits | Search Text | DBs | Time Stamp |
|---|------|-----|--------|----------------------------|------------------------|---------------------|
| 1 | IS&R | L1 | 223 | (514/350).CCLS. | USPAT;
US-PGP
UB | 2002/06/28
08:11 |
| 2 | BRS | L2 | 134060 | l1 and anti-freeze protein | USPAT;
US-PGP
UB | 2002/06/28
08:12 |
| 3 | BRS | L3 | 735 | l2 and lichen | USPAT;
US-PGP
UB | 2002/06/28
08:12 |
| 4 | BRS | L4 | 124 | l3 and glycosylation | USPAT;
US-PGP
UB | 2002/06/28
08:14 |

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File 155: MEDLINE(R) 1966-2002/Jul W1
File 5: Biosis Previews(R) 1969-2002/Jul W1
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File 315: ChemEng & Biotec Abs 1970-2001/Dec
 (c) 2002 DECHHEMA
File 73: EMBASE 1974-2002/Jul W1
 (c) 2002 Elsevier Science B.V.
File 399: CA SEARCH(R) 1967-2002/UD=13627
 (c) 2002 AMERICAN CHEMICAL SOCIETY
File 351: Derwent WPI 1963-2002/UD, UM & UP=200243
 (c) 2002 Thomson Derwent

?ds

| Set | Items | Description |
|-----|-------|---------------------------------------|
| S1 | 7128 | ANTI()FREEZE? ? OR ANTIFREEZE? ? |
| S2 | 29665 | LICHEN? ? |
| S3 | 460 | UMBILICARIA |
| S4 | 135 | AU=SIDEBOTTOM C? OR AU=SIDEBOTTOM, C? |
| S5 | 72 | AU=SMALLWOOD M? OR AU=SMALLWOOD, M? |
| S6 | 17 | AU=BYASS L? OR AU=BYASS, L? |
| S7 | 25 | S1 AND (S4-S6) |
| S8 | 6 | S7 AND (S2 OR S3) |
| S9 | 8 | S1 AND (S2 OR S3) |
| S10 | 8 | S8 OR S9 |
| S11 | 5 | RD S10 (unique items) |

?t 11/7/all

11/7/1 (Item 1 from file: 155)
DIALOG(R) File 155: MEDLINE(R)

10778477 20318565 PMID: 10860621
Distribution and characterization of recrystallization inhibitor activity
in plant and lichen species from the UK and maritime Antarctic.
Doucet C J; Byass L ; Elias L; Worrall D; Smallwood M ; Bowles D J
The Plant Laboratory, University of York, United Kingdom.
Cryobiology (UNITED STATES) May 2000, 40 (3) p218-27, ISSN
0011-2240 Journal Code: 0006252
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Extracts from a range of evolutionarily diverse plant and lichen
species from the UK and maritime Antarctic have been assayed for inhibition
of ice recrystallization. Approximately 25% of overwintering UK species and
all Antarctic species exhibited antifreeze activity when exposed to low
temperature. Preliminary characterization of the active extracts has
demonstrated that the molecules co-opted to antifreeze activity by
different species are biochemically diverse. Copyright 2000 Academic Press.
Record Date Created: 20000725

11/7/2 (Item 1 from file: 399)
DIALOG(R) File 399: CA SEARCH(R)
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135357072 CA: 135(25)357072r PATENT

Anti-freeze proteins, their production and use
INVENTOR(AUTHOR): Berry, Mark John; Doucet, Charlotte Juliette; Lundheim,
Rolv Sigmund; Sevilla, Marie-pierre; Whiteman, Sally-anne
LOCATION: UK;
ASSIGNEE: Unilever Plc; Unilever Nv; Hindustan Lever Limited
PATENT: PCT International ; WO 200183534 A1 DATE: 20011108
APPLICATION: WO 2001EP3927 (20010406) *GB 200010314 (20000427)
PAGES: 42 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C07K-014/41A;
A23G-009/02B; A23L-003/3526B DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU;
AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CR; CU; CZ; DE; DK; DM; DZ; EE; ES;
FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC;
LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NO; NZ; PL; PT; RO;
RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA;
ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS
; MW; MZ; SD; SL; SZ; TZ; UG; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB;
GR; IE; IT; LU; MC; NL; PT; SE; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML;
MR; NE; SN; TD; TG

SECTION:
CA217006 Food and Feed Chemistry
CA203XXX Biochemical Genetics
IDENTIFIERS: Nephroma antifreeze protein frozen food, lichen antifreeze
protein frozen food
DESCRIPTORS:
Confectionery... DNA sequences... Food additives... Food processing...
Frozen foods... Genetic engineering... Genetic vectors... Lichen...
Nephroma arcticum... Protein sequences...
anti-freeze proteins, prodn. and use
Gene, microbial...
antifreeze protein; anti-freeze proteins, prodn. and use
Proteins, specific or class...
antifreeze; anti-freeze proteins, prodn. and use
Glycosylation...
biol.; anti-freeze proteins, prodn. and use
Primers(nucleic acid)...
DNA; anti-freeze proteins, prodn. and use
DNA...
primer; anti-freeze proteins, prodn. and use
CAS REGISTRY NUMBERS:
372489-97-9 N-terminal amino acid sequence of antifreeze protein from
Nephroma arcticum; anti-freeze proteins, prodn. and use
372469-51-7 primer nucleic acid sequence; anti-freeze proteins, prodn. and
use

11/7/3 (Item 2 from file: 399)
DIALOG(R) File 399:CA SEARCH(R)
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131115671 CA: 131(9)115671k PATENT
Lichen antifreeze protein for use in frozen food
INVENTOR(AUTHOR): Sidebottom, Christopher Michael; Smallwood, Margaret
Felicia; Byass, Louise Jane
LOCATION: Neth.
ASSIGNEE: Unilever N. V.; Unilever PLC
PATENT: PCT International ; WO 9937673 A2 DATE: 19990729
APPLICATION: WO 98EP8554 (19981223) *GB 981420 (19980122)
PAGES: 20 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C07K-014/41A;

A23G-009/02B DESIGNATED COUNTRIES: AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; CA; CH; CN; CU; CZ; DE; DK; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK; MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; UA; UG; US; UZ; VN; YU; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM

DESIGNATED REGIONAL: GH; GM; KE; LS; MW; SD; SZ; UG; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG

SECTION:

CA217004 Food and Feed Chemistry

IDENTIFIERS: lichen antifreeze protein frozen food, ice cream lichen antifreeze protein

DESCRIPTORS:

Glycoproteins, specific or class... Proteins, specific or class...

antifreeze; lichen antifreeze protein for use in frozen food

Confectionery... Frozen foods... Gene,microbial... Ice cream... Lichen...

Protein sequences... Umbilicaria antarctica...

lichen antifreeze protein for use in frozen food

CAS REGISTRY NUMBERS:

232255-37-7 N-terminal sequence; lichen antifreeze protein for use in frozen food

11/7/4 (Item 1 from file: 351)

DIALOG(R) File 351:Derwent WPI

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014197042

WPI Acc No: 2002-017739/200202

Recombinantly produced Nephroma arcticum antifreeze proteins useful as additives for frozen confectionery

Patent Assignee: UNILEVER PLC (UNIL); HINDUSTAN LEVER LTD (UNIL); UNILEVER NV (UNIL)

Inventor: BERRY M J; DOUCET C J; LUNDHEIM R S; SEVILLA M; WHITEMAN S

Number of Countries: 094 Number of Patents: 002

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|--------------|------|----------|---------------|------|----------|----------|
| WO 200183534 | A1 | 20011108 | WO 2001EP3927 | A | 20010406 | 200202 B |
| AU 200146533 | A | 20011112 | AU 200146533 | A | 20010406 | 200222 |

Priority Applications (No Type Date): GB 200010314 A 20000427

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-----------|------|-----|----|----------|--------------|
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|--------------|----|---|----|-------------|--|
| WO 200183534 | A1 | E | 39 | C07K-014/41 | |
|--------------|----|---|----|-------------|--|

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200146533 A C07K-014/41 Based on patent WO 200183534

Abstract (Basic): WO 200183534 A1

NOVELTY - An antifreeze protein which is derived from the lichen Nephroma arcticum, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a nucleic sequence (II) encoding an antifreeze protein (I);
(2) a vector (III) comprising nucleic acid sequence (II);
(3) a method (IV) for producing an antifreeze protein (AFP) (I), comprising:
 (i) harvesting Nephroma arcticum from the wild; and
 (ii) preparing a protein-containing extract from the material of step (i), (the extract exhibits AFP activity);
 (4) a genetically modified organism (V), containing the nucleic acid sequence (II);
 (5) a protein-containing extract (VI) exhibiting AFP activity, prepared by (III) (the extract is suitable for use as a food additive); and
 (6) a food product (VII) comprising (VI).

USE - The antifreeze is useful as a food additive for altering the freezing characteristics of foods, especially frozen confectionery products (claimed).

pp; 39 DwgNo 0/0

Derwent Class: B04; D13; D16

International Patent Class (Main): C07K-014/41

International Patent Class (Additional): A23G-009/02; A23L-003/3526

11/7/5 (Item 2 from file: 351)

DIALOG(R) File 351:Derwent WPI

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012638491

WPI Acc No: 1999-444595/199937

New isolated antifreeze protein obtained from Lichen , used for the preparation of food products, particularly frozen confectionery products

Patent Assignee: SIDEBOTTOM C M (SIDE-I); UNILEVER NV (UNIL); UNILEVER PLC (UNIL)

Inventor: BYASS L J ; SIDEBOTTOM C M ; SMALLWOOD M F

Number of Countries: 085 Number of Patents: 010

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week | |
|---------------|------|----------|---------------|------|----------|--------|---|
| WO 9937673 | A2 | 19990729 | WO 98EP8554 | A | 19981223 | 199937 | B |
| AU 9926148 | A | 19990809 | AU 9926148 | A | 19981223 | 200001 | |
| BR 9814760 | A | 20001017 | BR 9814760 | A | 19981223 | 200056 | |
| | | | WO 98EP8554 | A | 19981223 | | |
| EP 1049713 | A2 | 20001108 | EP 98966922 | A | 19981223 | 200062 | |
| | | | WO 98EP8554 | A | 19981223 | | |
| CZ 200002693 | A3 | 20001213 | WO 98EP8554 | A | 19981223 | 200103 | |
| | | | CZ 20002693 | A | 19981223 | | |
| SK 200001093 | A3 | 20010118 | WO 98EP8554 | A | 19981223 | 200108 | |
| | | | SK 20001093 | A | 19981223 | | |
| CN 1284085 | A | 20010214 | CN 98813206 | A | 19981223 | 200130 | |
| HU 200100410 | A2 | 20010628 | WO 98EP8554 | A | 19981223 | 200143 | |
| | | | HU 2001410 | A | 19981223 | | |
| JP 2002508303 | W | 20020319 | WO 98EP8554 | A | 19981223 | 200222 | |
| | | | JP 2000528594 | A | 19981223 | | |
| MX 2000005140 | A1 | 20010501 | MX 20005140 | A | 20000525 | 200227 | |

Priority Applications (No Type Date): GB 981420 A 19980122

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|------------|------|--------|----------|--------------|
| WO 9937673 | A2 | E | 19 | C07K-014/41 |

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9926148 A C07K-014/41 Based on patent WO 9937673
BR 9814760 A C07K-014/41 Based on patent WO 9937673
EP 1049713 A2 E C07K-014/41 Based on patent WO 9937673

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

CZ 200002693 A3 C07K-014/41 Based on patent WO 9937673
SK 200001093 A3 C07K-014/41
CN 1284085 A C07K-014/41
HU 200100410 A2 C07K-014/41 Based on patent WO 9937673
JP 2002508303 W 19 C07K-014/41 Based on patent WO 9937673
MX 2000005140 A1 A23G-009/02

Abstract (Basic): WO 9937673 A2

NOVELTY - A novel antifreeze protein (AFP) obtained from Lichen is disclosed

DETAILED DESCRIPTION - A novel AFP which can be derived from Lichen comprises an apparent mol. wt. of 20-28kD and has an N-terminal amino acid sequence which shows at least 80% overlap with: A-P-A-W-M-D-A-E-S-F-G-A-I-A-H-G-G-L (I); and modified versions and isoforms of this protein.

INDEPENDENT CLAIMS are also included for:

(1) A nucleic acid sequence encoding an antifreeze protein as above; and

(2) A food product containing the antifreeze protein.

USE - The AFP can conveniently be used in food products, preferably in food products which are frozen or intended to be frozen. Especially preferred is the use of AFPs in products which are heated e.g. by pasteurization or sterilization prior to freezing and in frozen confectionery products.

ADVANTAGE - Using the AFP ingredient, mixes can be frozen under quiescent conditions, e.g. in a shop or home freezer without the formation of unacceptable ice crystal shapes and hence with a texture different to products normally obtained via quiescent freezing.

pp; 19 DwgNo 0/0

Derwent Class: D13; D16

International Patent Class (Main): A23G-009/02; C07K-014/41

International Patent Class (Additional): C12N-015/09; C12P-021/02;

C12R-001-645

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